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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/361,458 07/27/99 MEIGS

J 30-4590

EXAMINER

MMC2/0309

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ART UNIT

PAPER NUMBER

2832
DATE MAILED:

03/09/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/361,458

Applicant(s)
Meigs et al.

Examiner
Karl Easthom

Group Art Unit
2832



☒ Responsive to communication(s) filed on Jan 23, 2001

☒ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-11 and 21-29 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-11 and 21-29 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☐ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 12

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-11 and 21-29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is not seen how there is "particulate material" in the final product since there appears to be a composite of contiguous regions of metal and non-conductive material in the final product. The claim is misdescriptive. It appears any particulate is only in the starting materials.

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-11 and 21-29 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. As the claims are misdescriptive, they lack written description.

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-2, 4, 5, and 21-23 are rejected under 35 U.S.C. 102(b) as being anticipated by abstract (XP-002121182 - submitted by app.). The claimed invention is disclosed with nickel the conductive material and boron nitride the nonconductive particulate material.
7. Claims 1-2, 4-5, 6-7, 9-11, and 21-29 are rejected under 35 U.S.C. 102(b) as being anticipated by Ambros et al. Ambros et al. discloses the claimed invention at Fig. 1 where 1 is the conductive metal layer or foil of claims 6 and 11, and the conductive metal is silver or nickel as disclosed at col. 3, with alumina, silica etc. disclosed as the non-conductive material for the resistive composite material 3.
8. Claims 1, 3, 11, and 22-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Butz. Butz discloses the claimed invention at claims 1 or 2- silica and polytetrafluoroethylene as the nonconductive filler and carbon or copper or bronze for the conductive filler.
9. Claims 1, 4-7, 9, 11, 22, 23, and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Croson. Croson discloses the claimed invention at Fig. 1b or Fig. 2d, where the conductor is chromium and the non-conductor is SiO₂-silica, and the foil is nickel-chrome.
10. Claims 1-2, 4-7, 9, 11, 22-25, 27-28 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamada et al. Yamada et al. discloses the claimed invention at col. 15, lines 33-46, where copper foils are disclosed as an electrode, and the composite composition comprises alumina or zinc oxide or clay as a filler, col. 10, lines 26-37, and/or polytetrafluoroethylene, as the nonconductive particulate material, and the conductive material is carbon, col. 7. The

laminate is disclosed at col. 8, lines 50-55. The resistivity is disclosed at the bottom of col. 9. (While applicant claims particulate material, it is not seen how this occurs since all the particles form one solid mass). In claim 11, the copper foil is 1, see col. 15, lines 33-45, and is shiny compared to other materials.

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 3, 8, 10, 21, and 26-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada et al. in view of Chandler et al. Yamada et al. discloses the claimed invention as noted above except for the conductive filler being nickel or copper. Chandler discloses metal fillers for replacing carbon fillers such as that of Yamada et al. to obtain a lower resistivity for a PTC device col. 1, lines 1-30, and col. 5, lines 30-40 it would have been obvious to make such a replacement for the reasons stated.

13. Claims 3, 6-11, and 24-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over (XP-002121182 - submitted by app.). in view of either Clouser, Castonguay et al., or Lindblom et al. XP '182 discloses the claimed invention as noted above except for the foil conductive filler comprising copper (claim 3 and others), and except for the conductive metal layer or multilayer foil (claims 6, 11 and others). Clouser (col. 1, lines 15-25, col. 4, lines 50-58, col. 5, lines 60-65 - noting nickel or copper foils), Castonguay et al. (col. 1, lines 10-21), or

Lindblom et al. (col. 1, lines 12-25, col. 3, lines 40-52 - Invar having nickel)) disclose conventional circuit boards as laminates having conductive foils of nickel, copper, etc for the purpose of forming a circuit board with ready etching (see col. 1 of Castonguay et al.). It would have been obvious to form a circuit board as a laminate with a foil of any of the known conductors typically employed for the circuitry where XP'182 specifically discloses the use for circuit boards and the advantages over for example the nickel phosphorus of Castonguay. As for the conductive filler being copper, Clouser et al. discloses any transition metal such as chromium, nickel, cobalt, can be so employed, and electrode posited with a non-metal, col. 5, lines 2-30, col. 10, lines 5-25. Where copper is a transition metal, it would have been obvious to replace the conductive nickel of XP '182 with the copper of Clouser, where XP'182 also discloses electrodepositing a conductor with a nonconductor.

14. Applicant's arguments filed 1/23/01 have been fully considered but they are not persuasive in full, or are moot. The removed rejections represent the response to persuasive arguments. As to the argument that Ambros has no non-conductive particles dispersed throughout, this is not persuasive where applicant's composite in its final form is not seen to be particulate anymore than the nonconductive particulates in Ambros. Similar remarks apply to Yamada et al. As to Yamada, carbon is disclosed and claimed, contrary to the assertion otherwise. As to the crystalline polymer required, this is not precluded anywhere by the claim. Moreover, even where alumina or zinc oxide or clay not the particulate filler, polytetrafluoroethylene as the polymer meets the claim, since it is a non-conductive filler, and a

particulate as far as any of applicant's polytetrafluoroethylene is a particulate. As to the foil, the electrode is a foil, as noted.

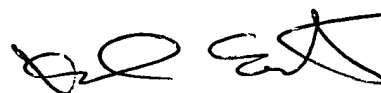
15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karl Easthom whose telephone number is (703) 308-3306. The examiner can normally be reached on M-Th from 6:30AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Gellner, can be reached on (703) 308-1721. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7722.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



KARL D. EASTHOM
PRIMARY EXAMINER

3/8/01